

# **UNIVERSITI TEKNOLOGI MARA**

## **MOBILE ASSISTED MATHEMATICAL EQUATION SOLVER USING HANDWRITTEN CHARACTER RECOGNITION**

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**BACHELOR OF COMPUTER SCIENCES (Hons.)**

**July 2017**

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USING HANDWRITTEN CHARACTER RECOGNITION**

**MOHD AMIR ASHRAAF BIN AMRAN**

**Thesis submitted in fulfilment of the requirement for Bachelor of  
Computer Science (Hons) Faculty of Computer Science and  
Mathematic**

**July 2017**

## **SUPERVISOR'S APPROVAL**

### **MATHEMATICAL EQUATION SOLVER USING HANDWRITTEN CHARACTER RECOGNITION**

By

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This report was prepared under the supervision of project supervisor, Miss Hajar Izzati Binti Mohd Ghazalli. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Computer Science (Hons).

Approved by

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Miss Hajar Izzati Binti Mohd Ghazalli  
Project Supervisor

JULY, 2017

## **STUDENT'S DECLARATION**

I certify that this report and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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JULY 24, 2017

## **ABSTRACT**

Nowadays, learning Mathematics courses can be very easy and interesting because of technological advances. The traditional ways in solving Mathematical equation have been enhanced from the first invention of abacus then replaced by standard calculator and scientific calculator. Since the beginning of smartphones eras, the technology of scientific calculator has been adapted into smartphones and become as mobile application. Based on the observation, there are several existing applications that used character recognition as scientific calculator. However, most of current applications were lack of effectiveness such as only able to solve simple calculation, difficult to recognize the handwriting document and poor quality of digital document. To overcome the problem, Handwritten Character Recognition (HCR) was used in this project which to enhanced the ability to recognize the handwritten document. The project will be development in native mobile application platform. An Agile methodology has been implied in this application development to ensure all the functionalities meet with the requirement. As the result, this application was under functionality testing to ensure all functionalities are working as required and the output are follow with the requirement. The hopes of this project is to able assist the users especially student to improve solving Mathematical problem in more accurate and faster. For the future work, the proposed application will enlarge the scopes of various kind of Mathematical problem and solutions techniques in order to produces more efficient and effective output.